## SMITHSONIAN INSTITUTION ASTROPHYSICAL OBSERVATORY

OFFICE OF THE DIRECTOR ASTROPHYSICAL OBSERVATORY 60 GARDEN STREET CAMBRIDGE 3B, MASSACHUSETTS

1 May 1963

Dr. Joshua Lederberg Department of Genetics Stanford University School of Medicine Palo Alto, California

Dear Josh:

As we discussed several months ago, I am enclosing two copies of the manuscript by Cyril Ponnamperuma, Ruth Mariner and myself on the synthesis of ribonucleoside phosphates under possible primitive earth conditions. We would be very grateful if this paper could be considered for submission to the Proceedings of the National Academy of Sciences, either by yourself or by Arthur Kornberg. I am also enclosing two copies of a paper on the synthesis of adenosine which we submitted several weeks ago for publication in Nature. We would, of course, welcome any suggestions which you or Professor Kornberg might have for improving the manuscript. Cyril has just told me that the luciferin-luciferase assay for ATP in our system was positive. We would hope to insert this result as a separate paragraph in the manuscript.

I have been spending a great deal of time getting my work routine organized here at Harvard and Smithsonian, and preparing the lectures for a course which I am giving on planetary physics. The literature seems full of half-truths and self-replicating misunderstandings. The codification and coherent presentation of present knowledge on planetary physics turns out to be a more difficult task than I had imagined, but the experience is a very rewarding one.

I am enclosing, finally, two planetary reprints which may possibly be of some interest.

There is a good chance that I will be spending two or three weeks at Ames at the beginning of August. Is there any chance of seeing you then?

With best regards,

Sincerely,

Carl Sagan

CS/reg cc: C. Ponnamperuma Enclosures (6)